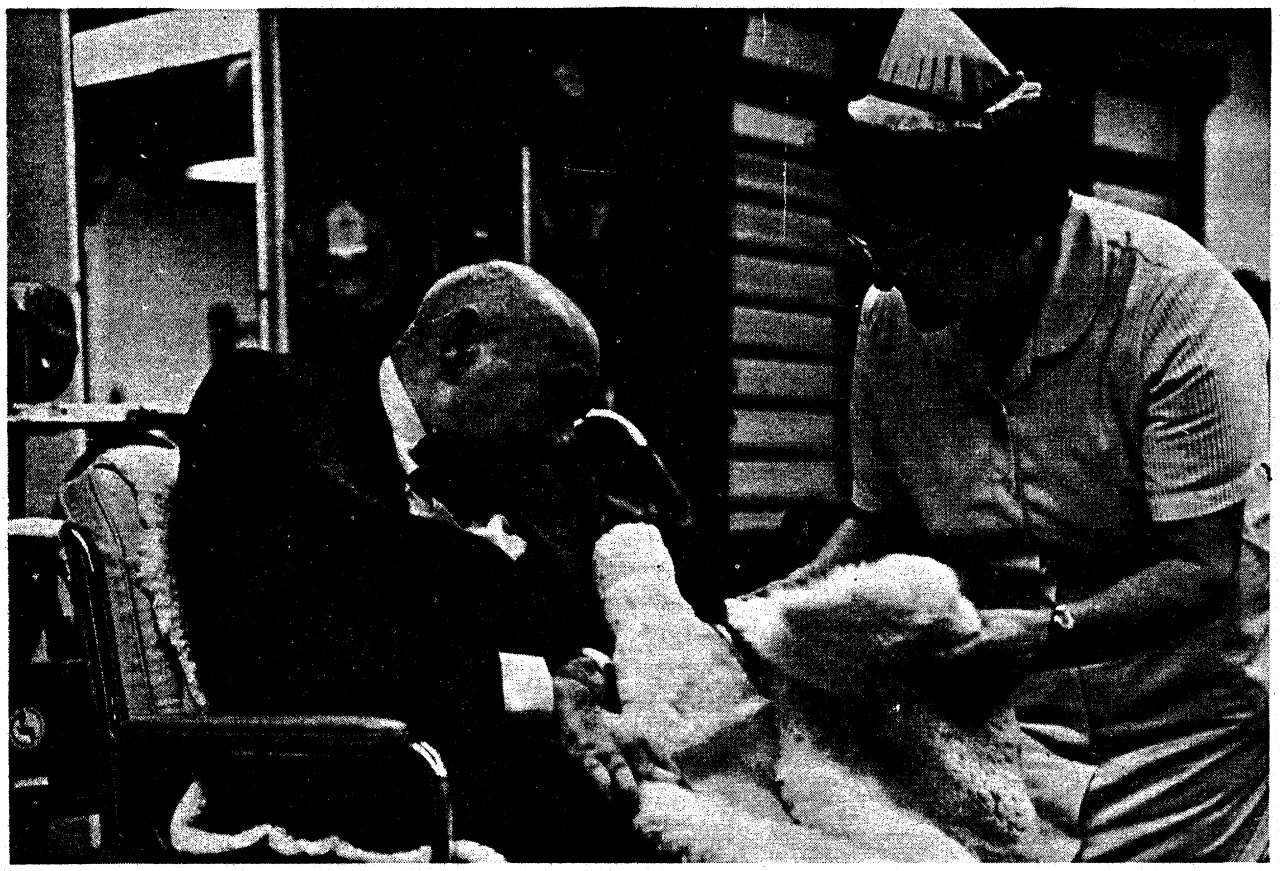
NEW WASHABLE WOOLSKINS

MIRIAM A. BROWNLOWE • FLORENCE R. COHEN • WILLIAM F. HAPPICH

Using woolskins at home may no longer pose laundering problems. According to these authors, a new tanning process has been developed which keeps the leather pliable and the wool resilient after many washings. Their use in homes and in hospitals to prevent and heal decubitus ulcers is reported here.

Woolskin bedpads or shearlings (sheepskins with the wool trimmed but not removed) have been used for many years in the prevention and healing of decubitus ulcers. Their use for this purpose has been reported extensively, particularly in the United States and in Australia (1-5). Shearlings tanned with the conventional alum or chrome salts, however, shrink and harden after a few launderings. Both Ewing and Pressley have recommended shearlings tanned with high amounts of chromium salts for hospitals and have reported on their use and launderability (3,5).

The washability of glutaraldehyde-tanned leather was discovered by Filachione and his co-workers, and it was this property which suggested the use of this tanning agent for the production of "easy care" shearlings (6-10). In studies concerning the effect of extensive laundering on the chemical and physical properties of glutaraldehyde-chrome-tanned shearlings, it was shown that bedpads tanned with alum or small quantities of chrome failed after a short time in service (11). Shearlings which were tanned with high amounts of chrome had increased durability but did not last as long as the glutaraldehyde pads,



ARTHRITIC patient in the outpatient clinic learns that these new woolskins stay resilient and pliable and can be washed at home.

and they became stiff more quickly.

In addition to being easy to launder, the glutaraldehyde-chrome-tanned shearling is also valuable in the prevention and the more rapid healing of decubiti. It offers softness to the touch, allows air to circulate because of the resiliency of the wool, and provides coolness in the summer and warmth in the winter. The fire-resistance of the wool is an important property for the safety of the disabled patient.

HOSPITAL SERVICE TEST

Two hundred and thirty of the experimental shearlings tanned with glutaraldehyde or a combination of chrome and glutaraldehyde were distributed to eight hospitals, one nursing home, and an outpatient clinic. The pads were examined regularly, removed from service after various periods of use, and then tested and evaluated.

The shearlings were washed with a mild soap or a detergent at a temperature of not over 120°F. to avoid shrinking the wool or hardening the leather. A disinfectant was used either in the wash cycle or in the final rinse. The pads were soured to a skin pH which was almost neutral, spun-dried, then tumble-dried at a stack temperature of not over 130°F.; or, the shearlings were hung to air-dry. They were laundered as frequently as required.

One hospital used ethylene oxide to sterilize the shearlings after washing and drying. However, treatment with this gas is expensive, and its routine use is reported to shorten the useful life of the shearling(12).

CLINICAL USE

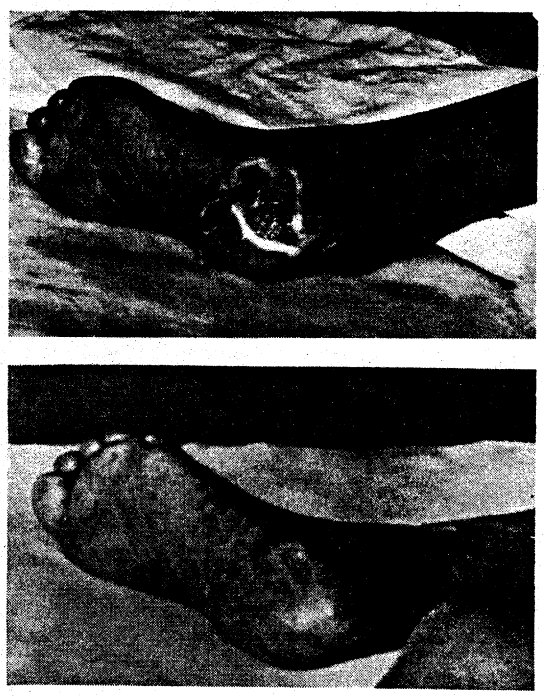
The shearling bedpads were used during a three-year period for adult male and female patients who had a wide variety of clinical diagnoses. The pads were used at pressure points under the back, sacrum, and heels, principally to prevent decubitus ulcers but also in conjunction with other treatments to heal the frequently severe ulcers which were present on admission. The doctors in one large hospital routinely prescribed shearling bedpads for cardiac patients on admission. When used either in the prevention or in the treatment of decubitus ulcers, the wool of the shearling was placed in direct contact with the skin of the bedridden patient.

The pads were used for a large number of patients in a variety of clinical situations: surgical patients with abdominal resections; amputation of the leg; brain tumor; cardiac surgery; choledochostomy; thoracic surgery; disc fusion; ophthalmic surgery; femoral arterial graft; fractures of cervical vertebrae, hip, knee, pelvis, ribs, and femur; skin graft; spinal fusion; and medical patients with delerium tremens, arthritis, burns, cerebral vascular accident, cirrhosis of liver, coronary thrombosis, diabetes, drug overdose, emaciation, hydrocephalus, impaired circulation, leukemia, myocardial infarction, multiple sclerosis, neurologic disorders, nephritis, obesity, paraplegia, pneumonia, Parkinson's disease, and subarachnoid hemorrhage.

SHEARLINGS AID VETERANS

For many years the Veterans Administration Outpatient Clinic in Philadelphia has dispensed woolskins (shearlings) for use at home by bed- or wheelchair-bound veterans.

The new glutaraldehyde-chrome-tanning process is valuable because a family member can easily wash and dry the shearlings in the home washer and dryer. In addition, there is increased service-life because the shearling remains soft and pliable. Previously, those caring for these



IMPROVEMENT of this ulcer, top, occurred with use of glutaraldehyde-treated pads.

MISS BROWNLOWE, a graduate of Philadelphia General Hospital School of Nursing, Philadelphia, Pa., is assistant director of nursing service at Philadelphia General Hospital. MISS COHEN who died recently, was graduated from Mt. Sinai Hospital School of Nursing, New York, N.Y., and received her B.S. from Simmons College, Boston, Mass. She was a public health nurse with the Henry Street Visiting Nurses Association and worked with the government of Ecuador, the American Red Cross, and the Veterans Administration. At the time of her death, she was chief nurse at Veterans Administration Outpatient Clinic, Philadelphia. MR. HAPPICH received both his B.Sc. and MSc. in chemistry from the Philadelphia College of Pharmacy and Science. He is a senior chemist in the Hides and Leather Laboratory, Eastern Utilization Research and Development Division, U.S. Department of Agriculture, Philadelphia, Pa., where he is engaged in research on new tanning procedures and the improvement of leather quality. He developed the process for tanning shearlings (woolskins) with glutaraldehyde.

The authors wish to thank the Abington Memorial Hospital, Abington, Pa.; the Holy Redeemer Hospital, Meadowbrook, Pa.; the Albert Einstein Medical Center, the Chestnut Hill Hospital, the Hospital and Home for the Jewish Aged, the Jefferson Medical College Hospital, the Moss Rehabilitation Hospital, the Philadelphia General Hospital, the Veterans Administration Out-patient Clinic, Philadelphia, Pa.; and The White Billet Nursing Home, Hatboro, Pa., for cooperation in this test.

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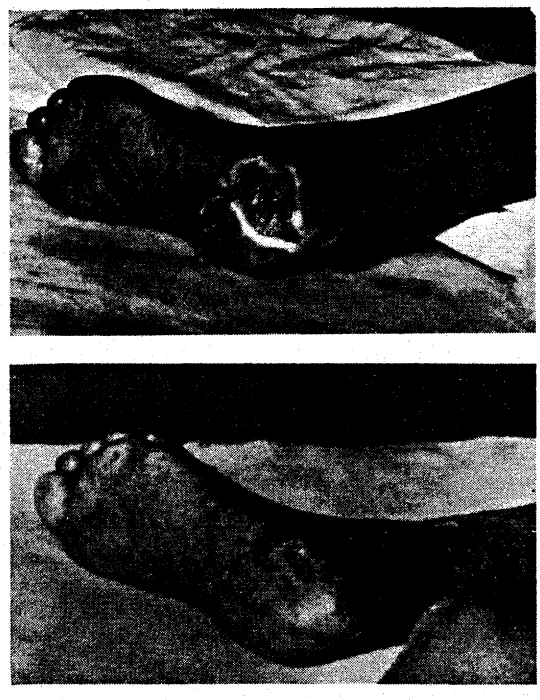

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